CLAIMS

1. A method of quantifying a plant belonging to a specific plant genus in a food or a food ingredient by a PCR method, comprising:

preparing a sample for correction where a sample derived from the specific plant genus to be detected and a standard plant sample are mixed in a predetermined ratio, and extracting genomic DNA from the sample for correction;

preparing a test sample where a known amount of the standard plant sample is added to the food or the food ingredient to be examined, and extracting genomic DNA from the test sample;

practicing a quantitative PCR using a primer set for detecting the sample derived from the specific plant genus to be detected and a primer set for detecting the standard plant sample with the genomic DNA extracted from each of the sample for correction and the test sample as a template;

determining, as a standard value for correction, a value of the copy number of the DNA derived from the standard plant/the copy number of the DNA derived from the specific plant genus for the sample for correction by the quantitative PCR method; and

determining a value of the copy number of the DNA derived from the specific plant genus/the copy number of the DNA derived from the standard plant for the test sample by the quantitative PCR method, and correcting the value with the standard value for correction to calculate the amount of the plant belonging to the specific plant genus contained in the food or the food ingredient.

2. The method according to claim 1, wherein the quantitative PCR method is a real-time PCR method.

3. The method according to claim 2, characterized in that the real-time PCR method quantifies DNA based on the amount of emitted light by use of a probe with a fluorescent dye at the 5' end and a quencher at the 3' end that hybridizes to an internal region of a genomic

DNA site, which is hybridized with each oligonucleotide of a PCR primer set, wherein light emitted from the fluorescent dye at the 5' end of the probe is suppressed by the quencher at the 3' end, while during Taq polymerase-catalyzed DNA extension from the primer in PCR reaction, the probe is degraded by the 5'→3' exonuclease activity of the Taq polymerase to dissociate the fluorescent dye and the quencher, then causing light emission.

4. The method according to any one of claims 1 to 3, wherein the standard plant belongs to a plant species other than upland weeds and food crops.

5. The method according to claim 4, wherein the standard plant is statice.

6. The method according to any one of claims 1 to 5, wherein the specific plant genus to be detected is the genus *Fagopyrum*, *Arachis*, *Triticum*, or *Glycine*.

7. The method according to claim 2 or 3, wherein the standard plant is statice, a primer set for detecting the statice is a set consisting of oligonucleotide having a sequence shown in SEQ ID NO: 57 and oligonucleotide having a sequence shown in SEQ ID NO: 58, and a probe for detecting the statice is oligonucleotide having a sequence shown in SEQ ID NO: 59.

8. The method according to claim 2 or 3, wherein the specific plant genus to be detected is the genus *Fagopyrum*, a primer set for detecting the genus *Fagopyrum* is a set consisting of oligonucleotide having a sequence shown in SEQ ID NO: 14 and oligonucleotide having a sequence shown in SEQ ID NO: 15, and a probe for detecting the genus *Fagopyrum* is oligonucleotide having a sequence shown in SEQ ID NO: 64.

9. The method according to claim 2 or 3, wherein the specific plant genus to be detected is the genus *Arachis*, a primer set for detecting the genus *Arachis* is a primer set consisting of oligonucleotide having a sequence shown in SEQ ID NO: 21 and oligonucleotide having a sequence shown in SEQ ID NO: 26, 65, or 66, and a probe for detecting the genus *Arachis* is

oligonucleotide having a sequence shown in SEQ ID NO: 34.

10. A primer set for detecting statice consisting of oligonucleotide having a sequence shown in SEQ ID NO: 57 and oligonucleotide having a sequence shown in SEQ ID NO: 58.

11. A primer set for detecting the genus *Fagopyrum* consisting of oligonucleotide having a sequence shown in SEQ ID NO: 14 and oligonucleotide having a sequence shown in SEQ ID NO: 15.

12. A primer set for detecting the genus *Arachis* consisting of oligonucleotide having a sequence shown in SEQ ID NO: 21 and oligonucleotide having a sequence shown in SEQ ID NO: 26, 65, or 66.

13. A kit for use in a method of detecting a plant belonging to a specific plant genus in a food or a food ingredient, comprising a primer set for detecting a standard plant sample.

14. The kit according to claim 13, further comprising a probe for detecting the standard plant sample.

15. The kit according to claim 13 or 14, wherein the standard plant is statice, and a primer set for detecting the statice is a set consisting of oligonucleotide having a sequence shown in SEQ ID NO: 57 and oligonucleotide having a sequence shown in SEQ ID NO: 58.

16. The kit according to claim 15, further comprising a probe for detecting the statice having a sequence shown in SEQ ID NO: 59.

17. The kit according to any one of claims 13 to 16, further comprising a primer set for detecting the specific plant genus to be detected.

18. The kit according to any one of claims 13 to 16, wherein the specific plant genus to be detected is the genus *Fagopyrum*, and a primer set for detecting the genus *Fagopyrum* is a set consisting of oligonucleotide having a sequence shown in SEQ ID NO: 14 and oligonucleotide having a sequence shown in SEQ ID NO: 15.

19. The kit according to claim 18, further comprising a probe for detecting the genus *Fagopyrum* having a sequence shown in SEQ ID NO: 64.

20. The kit according to any one of claims 13 to 16, wherein the specific plant genus to be detected is the genus *Arachis*, and a primer set for detecting the genus *Arachis* is a set consisting of oligonucleotide having a sequence shown in SEQ ID NO: 21 and oligonucleotide having a sequence shown in SEQ ID NO: 26, 65, or 66.

21. The kit according to claim 20, further comprising a probe for detecting the genus *Arachis* having a sequence shown in SEQ ID NO: 34.

22. The kit according to claim 15, further comprising a statice sample as the standard plant sample.

23. The kit according to claim 13, wherein the standard plant is statice and the specific plant genus to be detected is the genus *Fagopyrum*, the kit further comprising a plasmid for standard curves for the statice and the genus *Fagopyrum* that comprises DNA having an amplification target sequence of the statice and DNA having an amplification target sequence of the genus *Fagopyrum* with the DNAs ligated together.

24. The kit according to claim 13, wherein the standard plant is statice and the specific plant genus to be detected is the genus *Arachis*, the kit further comprising a plasmid for standard curves for the statice and the genus *Arachis* that comprises DNA having an amplification target sequence of the statice and DNA having an amplification target sequence

of the genus *Arachis* with the DNAs ligated together.

25. A kit for use in a method of detecting a plant belonging to the genus *Fagopyrum* in a food or a food ingredient, comprising a primer set for detecting the genus *Fagopyrum* consisting of oligonucleotide having a sequence shown in SEQ ID NO: 14 and oligonucleotide having a sequence shown in SEQ ID NO: 15.

26. The kit according to claim 25, further comprising a probe for detecting the genus *Fagopyrum* having a sequence shown in SEQ ID NO: 64.

27. A kit for use in a method of detecting a plant belonging to the genus *Arachis* in a food or a food ingredient, comprising a primer set for detecting the genus *Arachis* consisting of oligonucleotide having a sequence shown in SEQ ID NO: 21 and oligonucleotide having a sequence shown in SEQ ID NO: 26, 65, or 66.

28. The kit according to claim 27, further comprising a probe for detecting the genus *Arachis* having a sequence shown in SEQ ID NO: 34.